

# SUCCESS

**LINCOLN**  
**ELECTRIC**  
THE WELDING EXPERTS®

WELDING CONSUMABLES

## 30% Increase in Productivity

UltraCore®

Owen Steel Company, Columbia, SC

**A large structural steel contractor, Owen Steel has worked on some of the most recognizable buildings made in the last half century.**

### - CHALLENGE -

To increase productivity, quality, and reduce costs associated with welding operations.

### - SOLUTION -

Working with welding and gas distributor Praxair and welding equipment and consumables manufacturer Lincoln Electric, Owen Steel conducted extensive on-site tests and decided on Lincoln's UltraCore® 71C gas-shielded flux-cored wire.

### - RESULTS -

- 30% increase in productivity from new wire.
- Bidding advantage on new jobs.
- Long stick-out procedures combined with high wire feed speeds allow for higher deposition rates and arc stability, and reduced welder fatigue.
- Reduced spatter, clean up, and rework.



**A** skyscraper's most fascinating story is not always the reflective window façade frequently admired by passersby. Oftentimes, the truly interesting tale is told by the underlying support structure, its journey and how it will enable the building to stand up to modern-day demands for decades to come.

With this in mind, Owen Steel Company, based in Columbia, S.C., has contributed to some great stories during its 70 years in business. One of the country's leading structural steel contractors, the firm has been involved in the construction of some prominent buildings, including high rises such as the 48-story Conde Nast headquarters at Four Times Square, the 568-foot 450 Lexington Avenue Building in midtown Manhattan and the 54-floor Mellon Bank Center in downtown Philadelphia, as well as indoor arenas for the Chicago Bulls and Cleveland Cavaliers. Owen Steel has also contributed to transit hubs, including

the JFK Airport International Arrivals Terminal and the Secaucus (N.J.) Transit Station.

Over the years, Owen Steel and its projects have received numerous industry accolades, including being featured 10 times on the cover of leading industry publication Engineering News-Record.

Most recently, the 250-person firm fabricated the AESS columns on the New York Times Building in Manhattan as part of its contract for approximately 7,200 tons on that project, and has fabricated steel for the Bank of America Tower in New York (27,000 tons for a 54-story tower), Citigroup, Sloan Kettering Memorial Hospital, the Metropolitan Transit Authority Bus Depot and Xanadu at the Meadowlands.

With such prominent projects under its belt and more always in the works (the firm was just awarded the contract to build the World Trade Center Memorial and Museum at

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Ground Zero in New York), Owen Steel and its management team know that they must constantly innovate. They understand that in today's fiercely competitive environment the company must continually focus on improving and streamlining its business practices and fabrication processes.

In 2006, the firm looked to its welding operations for ways to save money and increase production - and found the answer in a material less than a quarter inch in diameter.



Working with welding and gas distributor Praxair and welding equipment and consumables manufacturer Lincoln Electric, Owen Steel conducted extensive on-site tests and decided on Lincoln's UltraCore® 71C gas-shielded flux-cored wire.

"Sometimes it's the smallest item which can make the biggest difference," said Isaac Murciano, Owen Steel chief operating officer. "In a 12-month span, we can use upwards of 300,000 pounds of weld material. This is a substantial investment, even for a firm our size. We knew that if we could find a more efficient wire, it had the potential to make a considerable contribution to our bottom line and give us a clear competitive advantage."

Owen Steel's weld department consists of 45 welders and can swell to 65 during peak times. The firm was counting on its new welding wire, along with recent welding equipment purchases, to make a substantial increase in productivity.

In initial testing, the UltraCore 71C wire in 1/16" diameter provided a 30-percent productivity increase. And with just half a year in actual usage, Owen Steel has already realized a 15-percent increase in productivity with the new wire in the two-and-a-half bays currently using it. The company anticipates reaching the 30-percent level once all of its welders are trained and the firm makes a complete conversion to the new material in all four bays.

Lincoln Electric and Praxair also help with all of Owen Steel's training. A

number of the firm's team members initially visited Lincoln's Cleveland headquarters for training on UltraCore and the firm's four new Lincoln Power Wave® AC/DC 1000 inverter power sources with Lincoln's Waveform Control Technology™. Additionally, the two companies continue with on site training for new and veteran employees.

Because every Owen Steel project is built to custom specifications, there is no "typical" project for the fabricator, so

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the number of welding hours can vary widely from project to project. A 10,000-welding-hour job is not unheard of, but with the Lincoln UltraCore wire, the fabricator now has the potential to save between 1,500 to 3,000 hours on just one job.

This realization has positively impacted Owen Steel's bidding process. The company, which estimates welding wire at pounds used per hour, has been able to realize cost savings and efficiency gains.

"This is one operational change that has made an immediate and demonstrable contribution to our ability to compete in today's marketplace," Murciano said "The competition is fierce on every job, and Lincoln's UltraCore wire gives us a competitive edge."

The UltraCore wire has also saved the company's welders time through drastically reducing the need for rework, cleanup and gouging.

Owen Steel typically welds on a variety of structural steel plates ranging from 1/2" to 8" in thickness. The firm gets raw material from U.S. and overseas sources, depending on project requirements. Finished product includes



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everything from giant trusses to box columns. Many of Owen Steel's building drive cores are steel (v. concrete), which can handle the multiple load variants and large amount of weight demanded by the complicated, mid and high rises the company specializes in.

Lincoln's UltraCore 71C wire is specifically designed to deliver superior consistency, reliability and performance

**“We’ve decreased downtime, clean up and rework. We’re spending less time on projects, while dramatically increasing productivity.”**



for these heavy-duty applications utilizing 100-percent carbon dioxide. It provides great flexibility on both single and multiple pass welding applications, including fillet, lap and butt welds. For Owen Steel, one of the primary distinguishing characteristics the UltraCore wire has delivered is greatly increased deposition rates.

“UltraCore’s long stickout procedures have allowed us to maximize the deposition rate, while giving our welders better arc control,” explained Dexter James, Owen Steel welding supervisor.

This extended stickout – up to 1-3/4” – combined with high wire feed speeds allow for higher deposition rates and arc stability, while performance and weld properties are maintained.

“It has also helped reduce welder fatigue, which our guys really appreciate,” James added.

Mike Daley, Owen Steel quality assurance manager, added that the welders also welcome the decrease in spatter provided by the UltraCore wire: “We’ve seen a notable decrease in spatter, clean up and rework. And with its extremely tight tolerances, there is less adjusting, less waste and greater efficiency – all of which empowers our welders to do their jobs faster without sacrificing quality.”



“The UltraCore wire was the competitive advantage we needed. It delivers consistency, control and efficiency. We’ve decreased downtime, clean up and rework. We’re spending less time on projects, while dramatically increasing productivity,” Murciano summarized. “Our customers benefit, as does our welders and our bottom line.”



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## Featured Lincoln® Products



### Power Wave® AC/DC 1000™

The Power Wave® AC/DC 1000™ is the first power source to introduce Waveform Control Technology® to submerged arc welding. An operator can increase weld speeds, yield higher quality welds and improve efficiencies in a single or multi-arc environment.

Order K2344-1



### UltraCore® Wire

The UltraCore® family of products covers a wide variety of applications, from general fabrication, to bridge construction, to structural fabrication, to offshore, and beyond.

**AWS  
D 1.8**

UltraCore® 71C and 71A85 are AWS-D certified to meet the demanding requirements of D1.8 Structural Steel Fabrication – Seismic Supplement.  
See Publication MC06-237